

Comments on the "Broadcast Flag" use restriction scheme.
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1. On the surface, the "Broadcast Flag" scheme and the rationale for it appear to be simple.

Film and video producers, represented by the MPAA, want the income they get by licensing programs to broadcasters. They also want the income from retail sales of media products containing these same programs. They fear that unauthorized redistribution of high-quality digitally broadcast material will reduce demand for their retail products and for syndication rights. They are therefore seeking Federal laws or FCC regulations requiring future digital broadcast receivers and recorders to restrict the uses to which received broadcasts may be put. They claim that the higher quality of digital broadcasts, and especially the higher quality of digital copies of digital broadcasts, forces them to be wary of releasing content to broadcasters without having these restrictions in place.

Enter the Broadcast Flag. A content provider wishing to restrict future use of a program may simply add a marker to the digital programming datastream to signify a request for "protection", and then rely on the TVs and recorders downstream to prevent users from doing things he has chosen to forbid.

2. Neither the scheme nor its ultimate purpose is as simple as it appears.

When we start thinking about the scope of the restrictions that must be placed on the downstream equipment, and about the actions that must be made illegal to preserve their effect, we can see what this "modest proposal" really entails.

Let's make the questionable assumption that the consumer electronics industry can decide on a set of use-restriction policies that are relatively easy to implement and aren't perceived as unacceptable obstructions to the things that users feel entitled to do. Because we are dealing with digital media, we must also consider the issue of personal computers. Analog TV tuner cards are widely available for PCs now, and demand for PC-based digital TV tuner hardware is assured. But PCs, unlike most other consumer electronics, run the software their users install, and neither the computer maker nor the MPAA has any control over the software suppliers, especially in this era of the Internet and Open Source software development projects. How can this software be prevented from ignoring or even removing the Broadcast Flag?

We can go so far as to assume even that hard problem away by supposing that PC-based digital TV tuners for today's PCs are made illegal, and that legal tuners work only with future "secure" PCs like those anticipated by the Broadcast Protection Discussion Group and promised by Microsoft. But we must acknowledge the existence of hundreds of millions of powerful old-school PCs, many of which are owned by people who use analog TV tuners and who will not be eager to learn that they must buy a new computer to watch digital broadcasts. Modern CPUs, such as the Pentium 4, Athlon, and PowerPC G4, have digital signal processing

instruction sets that allow them to do the work of dedicated DSP chips, There already exists a software project to use this power to make minimal radio equipment perform the functions of much more sophisticated devices. By using widely-available hardware, and employing software to define the more complex demodulating and decoding functions of a DTV tuner, anyone so inclined will be able to do as they wish with digital broadcasts. [1]

Having considered some of the means by which the Broadcast Flag system may be defeated, we see that what may initially appear to be a simple strategy must be backed by drastic measures to have anything like the desired effect. To make the Broadcast Flag do what it's supposed to do, not only will home video equipment have to change, but entire new "Digital Rights Management"-friendly architectures for personal computers and the Internet will have to be decreed by law. And, thanks to software-defined receivers, it will still fail - pre-DRM computers will still be able to act as conduits between digital broadcasts and the Internet.

Finally, we must recall the nature of broadcast TV's vast wasteland. Movies will still reach broadcast TV only after the usual series of more lucrative releases in theaters, on DVD, and on premium cable channels. They will be edited for content, and trimmed or sped up to fit neatly together with their commercials in their assigned time slots. TV is and will remain ephemeral trash, rarely worth the storage space or cataloguing effort that its unauthorized capture entails. Even if every kid in America gets Internet access to sitcom episodes and butchered movies, the visual quality of these important works of art will be limited for years to come by bandwidth rather than by source quality. The effort required to control access to this material seems disproportionate to the value of the programs, leading one to conclude that the Broadcast Flag scheme's proponents are primarily concerned with something other than digital broadcasting.

3. Control over unauthorized re-use of broadcast material is a very small part of what the MPAA hopes to gain from implementation of the "Broadcast Flag" scheme.

The real issue is total control of commercial information media.

Documents on the MPAA's own website tell us that the Broadcast Flag scheme is only one part of the information architecture that the MPAA is attempting to impose through legislation. In addition to building use-restriction mechanisms into everything that can be used as a digital media player, the MPAA seeks to close every "analog hole" that users could exploit to bypass digital use-restriction schemes. Because digital audio and video streams must be converted to unencrypted - and recordable - analog signals to be of any use to human beings, this is an extremely ambitious goal. Finally, recognizing that these systems will still be hacked, and that unauthorized digital media files will be created, the MPAA demands means to identify and interdict Internet traffic in these files. [2]

The radical changes in our information infrastructure that would be necessary to make the Broadcast Flag scheme work are exactly what the MPAA is seeking; not to protect the questionable value of broadcast

programming, but to create new business models that could, given sufficient bandwidth, replace broadcasting altogether. Combining the technology supporting "Broadcast Flag" with existing technologies for data encryption and e-commerce would allow creation of a pay-per-play system or any other profitably restrictive system imaginable.

One may argue that the media moguls have every right to construct such a system, and we can see clearly that Jack Valenti and other spokesmen of his industry are unashamed to make their plans public. The new regime would, as Lawrence Lessig has often explained, provide a technological means for copyright owners to ignore even the few legal limitations on copyright that still exist, such as copyright expiration and "fair use" conventions, but this will please the sort of "free market" advocates who habitually overlook the coercion required to create profitable stacked-deck market spaces.

The ultimate issue is neither the movie studios' profits nor our access to their products. The real issue for public debate is the freedom that must be sacrificed to give the studios the control they want over their customers and over the design and use of information technology. The Digital Millennium Copyright Act has already established the principle that computer programmers' freedom of speech, and DVD buyers' right to do as they like with their property, are to be sacrificed to the wishes of the entertainment industry. Under the DMCA, any technology that can be used to circumvent a technology for restricting access to copyrighted material is criminal, so every new regulation concerning access control will create new kinds of crime. Many of these crimes will consist of nothing more than attempts to do things that are routinely done with earlier technology. Expanding the scope of regulation must lead either to unenforceable laws or to unreasonably invasive enforcement.

4. The MPAA's attempts to justify its positions on ethical or legal grounds is not merely self-serving, but an assault on First Amendment rights and on conventional property rights.

Jack Valenti, President and CEO of the Motion Picture Association of America, frequently summarizes his theory of Digital Rights Management with the line "if you can't protect what you own, you own nothing." Like his assertion that the term of copyright ought to be "forever, less one day", this expresses a theory of absolute "intellectual property" rights under which every use of copyrighted material not explicitly authorized by the copyright holder is to be considered "theft."

But this theory is supported neither by the U.S. Constitution nor by logic. Real property rights are necessary in a free society, because they prevent the conflicts of interests that result when any number of people have an equal right to say what is done with particular things that can't simultaneously serve all those people's purposes.

"Intellectual property rights" - in the literal sense of unconditional ownership of ideas and their expression - have no such justification, because there need be no conflicts of interests over intangible entities that aren't subject to scarcity. Worse, any regime that tries to enforce such "rights" must become totalitarian; it must seek out "thieves" when any number of people may simultaneously "steal" the same piece of "property" in scattered locations and in secret, without making the

"crime" apparent by taking anything away from the "property owner".

Property rights make the rule of law possible by allowing the resolution of disputes over real goods which exist in limited quantities; "intellectual property rights" undermine the rule of law by granting to particular people - or, under current conditions, particular corporations - the privilege of using government power to create shortages for profit.

The Constitution's "Authors and Inventors" clause gives Congress the power to create certain privileges, "for limited Times," to the extent that these privileges "promote the Progress of Science and useful Arts," but neither that power nor any other that Congress is given is unchecked by the "Congress shall make no law" language of the First Amendment. I have no right to set up a business selling Harry Potter tapes, but I have every right to make a tape for my mother; although both acts are criminal according to the MPAA, only a police state could seriously attempt to suppress the latter kind of activity.

5. What should the FCC do?

Because the First Amendment prohibits the government from regulating the content of public or private communications, the sole justification for the Federal Communications commission's power to regulate broadcasters is the fact that the "airwaves" must be treated as a public commons. Broadcast signals cannot be made to respect property lines, nor can they coexist usefully with other signals at the same frequency. The FCC's role is to facilitate communications by setting up the "rules of the road" for users of communications technology. Its role in regulating user equipment is to ensure that devices conform to the spectrum allocation rules for their intended applications, and that they don't generate enough radio frequency interference to disrupt other uses of the spectrum.

The FCC, by licensing stations to broadcast at particular frequencies, necessarily grants monopolies on the use of particular channels in particular places. Whether a receiver user in a broadcaster's territory has any use for the broadcaster's signal or not, the broadcaster has been given the power to preempt all possible alternative uses of that channel. Such power is clearly not a right, but a privilege that must be legitimized by the use that the broadcaster makes of it.

Since the early days of radio, broadcasters' business models have been based on the fact that advertisers will pay to put their names and wares in front of an audience. Program providers have been paid by broadcasters to supply the material that draws audiences to see the all-important commercials. While the products of this system may be criticized on various grounds, the broadcasters, program providers, advertisers, and consumers are sufficiently satisfied with the system that its legitimacy is rarely questioned. However, if broadcasters or program providers attempt to increase their profits at viewers' expense, their efforts will and should be questioned. For example, the use of encryption to put broadcasting on a fee-for-service basis is unacceptable on the public airwaves, and remains confined to privately-owned infrastructures like those of the cable and satellite TV companies.

Technology has given consumers additional ways to use broadcast programming. For decades, media consumers have been able to use analog

recording devices to capture and replay audio and video programs of their choice. Because these devices work with signals that have already been received and demodulated in the usual way, the FCC's involvement with them has been limited to the usual technical issues of suppression of radio frequency interference.

Today, neither broadcasters nor program producers have any way to restrict the uses to which broadcast signals and programs may be put by members of the public who elect to receive them. Although the MPAA desires to be given the means to do so, there are good reasons to deny it the powers it seeks. Because the issue is outside the area of the FCC's unique competence, because use-restriction rules would upset the producer/broadcaster/viewer balance for the benefit of only the program producers, and for all the reasons stated above, the FCC should not support the Broadcast Flag effort in any way. It is extremely likely that the movie industry will learn to live with digital broadcasting, even without the Broadcast Flag, as well as it has managed to survive the advent of the once-dreaded VCR. [3]

1. <http://www.gnu.org/software/gnuradio/gnuradio.html>

"GNU Radio is a collection of software that when combined with minimal hardware, allows the construction of radios where the actual waveforms transmitted and received are defined by software. What this means is that it turns the digital modulation schemes used in today's high performance wireless devices into software problems."

Free Software Foundation

2. http://www.mpaa.org/jack/2002/2002_02_28b.htm

In Jack Valenti's 2/28/02 presentation to the Senate Commerce Committee, he offers a vision of a "cleansing redemption":

"...if through technological measures, producers of visual entertainment could defeat the spread of pirated movies populating 'outlaw' Net sites, the Net would be cleared of illegal debris and able to hospitably welcome legitimate, superior quality entertainment in a user-friendly format."

3. <http://cryptome.org/hrcw-hear.htm>

"I say to you that the VCR is to the American film producer and the American public as the Boston strangler is to the woman home alone."

Jack Valenti, 4/12/1982, testimony at U.S. House of Representatives' hearing on "Home Recording of Copyrighted Works."